FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT

U.S. Department of Energy
Office of Science
Office of Biological and Environmental Research

Environmental Remediation Science Program

Funding Opportunity Number: DE-PS02-08ER08-09

Announcement Type: Initial

CFDA Number: 81.049

ISSUE DATE: **12/19/2007**

Preapplication Due Date: **1/22/2008, 4:30 PM Eastern Time**

Application Due Date: **3/26/2008, 8:00 PM Eastern Time**

NOTE: REQUIREMENTS FOR GRANTS.GOV

Where to Submit: Applications must be submitted through Grants.gov to be considered for award. You cannot submit an application through Grants.gov unless you are registered. Please read the registration requirements carefully and start the process immediately. Remember you have to update your CCR registration annually. If you have any questions about your registration, you should contact the Grants.gov Helpdesk at 1-800-518-4726 to verify that you are still registered in Grants.gov.

Registration Requirements: There are several one-time actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See http://www.grants.gov/GetStarted. Use the Grants.gov Organization Registration Checklist at http://www.grants.gov/assets/OrganizationRegCheck.doc to guide you through the process. Designating an E-Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. Applicants, who are not registered with CCR and Grants.gov, should allow at least 21 days to complete these requirements. It is suggested that the process be started as soon as possible.

IMPORTANT NOTICE TO POTENTIAL APPLICANTS: When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

MICROSOFT VISTA AND OFFICE 2007 COMPATIBILITY: Grants.gov is currently incompatible with both the new Microsoft (MS) Vista Operating System and the new Microsoft (MS) Office 2007 versions of Word, Excel and Power Point. In order to create and submit your application to Grants.gov, you must find a computer with a previous version Microsoft Operating System, such as Windows XP.

If you attach a file created using MS Office 2007, you will not get an error message when you submit the application, HOWEVER your entire application will not be able to be processed or accepted at Grants.gov and will not reach DOE. Grants.gov can accept applications with attachments created in MS Office 2007 if the attachments are saved in the prior format. See www.grants.gov/www.grants.gov/assets/Vista_and_office_07_Compatibility.pdf for detailed instructions on how to do this. A file created in MS Office 2007 can be identified by the "x" at the end of the file extension, for example "sample.docx" for a Word file.

Contact Grants.gov at 1-800-518-4726 with any questions.

Questions: Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII of this announcement explains how to submit other questions to the Department of Energy.

Application Receipt Notices: After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the e-mails. It may take up to two (2) business days from application submission to receipt of e-mail Number 2. When the AOR receives e-mail Number

5, it is their responsibility to follow the instructions in the e-mail to logon to IIPS and verify that their application was received by DOE. The titles of the five e-mails are:

Number 1 – Grants.gov Submission Receipt Number
Number 2 – Grants.gov Submission Validation Receipt for Application Number
Number 3 – Grants.gov Grantor Agency Retrieval Receipt for Application Number
Number 4 – Grants.gov Agency Tracking Number Assignment for Application Number
Number 5 – DOE e-Center Grant Application Received

The last e-mail will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last e-mail changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This e-mail will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

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F. Intellectual Property Developed under this Program
G. Notice of Right to Request Patent Waiver
H. Notice Regarding Eligible/Ineligible Activities

PART I – FUNDING OPPORTUNITY DESCRIPTION

GENERAL INQUIRIES ABOUT THIS FOA SHOULD BE DIRECTED TO:

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E-mail: Michael.Kuperberg@science.doe.gov

SUMMARY:

The Office of Science (SC), U.S. Department of Energy (DOE), hereby announces interest in receiving applications for research grants in the Environmental Remediation Sciences Program (ERSP). The Environmental Remediation Sciences Division (ERSD) within the Office of Biological and Environmental Research (BER) is tasked with developing the fundamental scientific basis for understanding the fate and transport of contaminants in the subsurface. This task is guided by the **ERSD long term performance measure** to "*provide (by 2015) sufficient scientific understanding such that DOE sites would be able to incorporate physical, chemical and biological processes into decision making for environmental remediation and long-term stewardship*." In order to meet this measure the ERSD funds basic research to investigate the key processes affecting the mobility of subsurface contaminants found at DOE sites. The goal of this solicitation is to support innovative, fundamental research investigating the coupled physical, chemical, and biological processes affecting the transport of subsurface contaminants at DOE sites. Applications should address hypothesis-driven research to define and/or understand the key physical, chemical, and biological processes influencing the form and mobility of DOE contaminants in the subsurface. Research projects should aim to provide the scientific basis for the development of new remediation concepts, or strategies for the long term stewardship of contaminated sites across the DOE complex. **Applications should address the applicability of the proposed research to understanding DOE relevant, field-scale, contaminant transport processes.** The environment of interest is the terrestrial subsurface including the vadose zone, the saturated zone and key groundwater-surface water interfaces. Phytoremediation and the study of organic contaminants are NOT addressed in this Notice. An outline of the general science needs of the ERSP is listed below.

It is anticipated that up to **$6,000,000 will be available for approximately 20 awards** to be made in Fiscal Year 2009, contingent on the availability of appropriated funds. For a **Full Application** (narrative limited to 20 pages) applicants may request project support for up to three years with annual budgets for single investigator projects not to exceed $250,000/year total costs. Annual budgets for multi investigator projects may not exceed $450,000/year total costs. For an **Exploratory Application** (narrative limited to 10 pages), applicants may request project support for up to two years with a total budget of up to $150,000. **Applications should specify whether the application is a Full Application or an Exploratory Application.**

SUPPLEMENTARY INFORMATION:

The Department of Energy oversees some of the largest environmental cleanup operations in the world. Cold War Era processing of uranium for nuclear power and weapons has left an enduring legacy of over 6 billion cubic meters of contaminated soil and groundwater. Innovative solutions, based on scientific understanding of subsurface processes, are needed to remediate, manage and

monitor the various contaminated sites found across the DOE complex (NRC, 2000). The cleanup of contaminated sites across the DOE complex presents an enormous technical, scientific and financial challenge for the Department of Energy and the nation as a whole. While technologies exist for dismantling and decommissioning surface structures such as contaminated buildings, contaminants that have entered the subsurface are exceptionally difficult to clean up. This is particularly true for those contaminants that are spread over wide areas and whose potent toxicity and persistence require removal to very low levels. Radionuclides, which are products of nuclear fuel and weapons manufacturing, are of particular concern to DOE cleanup operations at DOE sites in addition to heavy metals and non-aqueous phase liquids (NAPLs). This solicitation targets a subset of these contaminants listed below under the Contaminants of Concern section of the solicitation. **At this time, we are NOT soliciting research projects that focus on non-aqueous phase liquids (organic contaminants).**

The projected performance of subsurface remediation techniques and long term stewardship strategies is often based on insufficient knowledge of the transport behavior of contaminants in the subsurface, across key groundwater-surface water interfaces and the mechanisms of contaminant transformation. As a result, predictions of long-term contaminant mobility often prove to be inaccurate and *in situ* cleanup strategies often do not meet performance expectations, exceeding both cost and time schedule estimates. At many sites, it is likely that subsurface contamination will remain long after surface remediation measures have been completed (DOE, 2001; NRC, 2000). It is therefore imperative that the DOE understand the factors that affect contaminant mobility and transformation within the subsurface and across key groundwater-surface water interfaces in order to devise new remediation and long-term monitoring strategies and to provide realistic assessments of the threat posed by subsurface contamination. These tasks will require significant advances in our understanding of the key factors controlling the mobility and fate of contaminants. Additionally, these tasks will require the development of innovative tools for detecting, monitoring, modeling and stabilizing contaminants *in situ*, as well as novel techniques for removing contaminants from the subsurface.

The ERSP portfolio maintains a diverse suite of projects ranging from molecular-scale science to field-scale investigations. The ultimate goal of the ERSP is to provide the DOE with field-scale descriptions of subsurface processes affecting contaminant transport or transformation. Of the major challenges that remain, one of the most important is the linking of molecular-scale processes to larger scale processes and ultimately, to processes occurring at the field-scale.

Projects funded within the ERSP should progress toward demonstrating the field relevance of processes or techniques under investigation. To promote this approach, the ERSP is soliciting integrative and/or multidisciplinary applications addressing the investigation of contaminants of greatest concern to the DOE. This is not meant to preclude single investigator projects of strong DOE environmental relevance.

The preceding discussion is based on the ERSP Strategic Plan which is available on the ERSD website at http://www.science.doe.gov/ober/ERSD_top.html.

Contaminants of Concern

Key contaminants (and their mixtures) of interest for this Notice are:

- Radionuclides: uranium, technetium-99, strontium-90, plutonium, cesium-137, iodine-129, and neptunium-237.
- Non-Radioactive Metals: chromium(VI) and mercury.
- Nitrate and complexing agents but only as co-contaminants with the listed radionuclides or non-radioactive metals.

Non-aqueous phase liquids (organic contaminants) are NOT a focus for this Notice. Applications addressing NAPL (organic contaminants) will not be considered at this time.

A description of the nature and extent of contamination at the principal DOE sites is available at http://www.nap.edu/books/0309065496/html/index.html/. More detailed information is available in some cases from the major DOE sites: Hanford (http://www.hanford.gov, http://www.hanford.gov/cp/gpp/, http://www.hanford.gov/cp/gpp/science/sandt.cfm)
Idaho National Laboratory
(http://www.inl.gov/subsurface/environmentalissues/vadosezone.shtml)
Oak Ridge Reservation
(http://www.oro.doe.gov/external/Programs/EnvironmentalManagement/tabid/42/Default.aspx)
and Savannah River Site (http://www.srs.gov/general/srs-home.html,
http://www.srs.gov/general/programs/soil/extpage.html

Research Applications: Full and Exploratory

Applications submitted in response to this announcement should address the basic Science Needs of the ERSP outlined below, and should address at least one of the contaminants of interest. Applications must identify whether the application is a **Full Application** or an **Exploratory Application** as defined below. Both single investigator projects and multi-investigator projects are encouraged. Multi-investigator projects are expected to integrate multiple disciplines into the project. All projects should clearly delineate an integrative, hypothesis-driven research approach and describe how the results of the research would ultimately improve understanding of processes affecting the mobility of contaminants at the field scale in the context of the DOE cleanup mission. A specific statement of the environmental relevance of the proposed research to the DOE will be an important component of successful applications.

Note that the Novel Measurement and Monitoring science element, which has been a separate element within previous ERSP solicitations, is now incorporated into the Science Needs described below. Applicants proposing to develop novel measurement and monitoring technologies should justify both the novelty and technical merit of the proposed sensing systems as well as explain the potential to improve the understanding of subsurface processes and the monitoring of contaminated sites.

The intent of the Exploratory Research program is to catalyze the study of new concepts, tools and approaches that could lead to breakthroughs in subsurface remediation science as well as to broaden the pool of researchers in the ERSP. Eligible areas include the ERSP science needs described below. Exploratory Research projects will have shorter duration and less funding than Full Projects. These projects are intended to provide opportunities to conduct preliminary research and to develop novel ideas for later, more substantial funding opportunities within the ERSP (i.e., Full Applications). Exploratory Research applications should address topics that

could lead to breakthroughs in understanding and/or technology in one or more of the science areas in the program and align with the ERSP focus on processes occurring in the terrestrial subsurface including the vadose zone, the saturated zone and key groundwater-surface water interfaces. The contaminants of interest for this Notice are the same as those listed above in the Contaminants of Concern section.

Science Needs

The ERSP seeks to develop a fundamental and quantitative understanding of the physical, chemical and biological processes affecting contaminant transport in the subsurface and at key groundwater-surface water interfaces at DOE sites. Critical to this objective is a better understanding of how these processes couple to affect contaminant mobility, reactivity and stability in subsurface environments

Understanding contaminant transport at the field scale is limited by our current, inadequate understanding of the physical, chemical and biological factors that control contaminant mobility. Methods to characterize subsurface structures and the physical, chemical and biological properties affecting contaminant transport over a wide range of scales are crucial to providing more realistic conceptual models of contaminant transport. Geophysical and hydrogeologic methods to measure important subsurface structural and/or transport parameters are of interest to the ERSP as well as methods to detect and track temporal geochemical and biogeochemical changes in subsurface environments. Of particular interest are novel methods or techniques that directly impact the development of conceptual and/or quantitative models of contaminant mobility.

Many chemical and geochemical factors affect the transport and transformation of contaminants found in subsurface environments. Often several competing processes occur simultaneously complicating an overall quantitative description of contaminant mobility. At many DOE sites, DOE-relevant contaminants are found under unusual conditions of pH, ionic strength and redox potential, and in unusual mixtures or mineral forms not previously described. Additionally, various *in situ* remediation techniques produce changes in local geochemical conditions in groundwater or vadose zone settings that directly influence contaminant mobility. The ERSP seeks to develop an understanding of the key chemical and geochemical interactions that have a quantitatively important effect on contaminant transport in subsurface environments and the tools to detect and measure these processes. This requires the identification and prioritization of the essential processes needed to predict the extent and rate of reactions affecting contaminant transport at DOE sites. Insight gained at the molecular scale should be used to interpret or predict processes occurring at larger scales and ultimately along groundwater flowpaths in the subsurface. Refinement of conceptual and computational models of contaminant transport based on new geochemical understanding of contaminant mobility and insight of processes at the microbe-mineral interface is also of interest.

Microorganisms detected in the subsurface can profoundly alter geochemical conditions along groundwater flowpaths. In addition to indirectly creating conditions hindering contaminant mobility, many microorganisms are known to directly biotransform contaminants to innocuous or immobile forms. This is the basis for several *in situ* bioremediation technologies and natural attenuation mechanisms and may also play a role in the effectiveness of some *in situ* barrier systems. However, the sustained manipulation of subsurface microbial communities to affect

contaminant transport and/or degradation is still largely an empirical exercise. Likewise the microbially-mediated mechanisms of natural attenuation processes and potential microbial involvement in other more physical/chemical *in situ* remediation techniques remain poorly understood. Much remains to be learned about the identity and, more importantly, the functioning of subsurface microbial communities relevant to contaminant biotransformation processes. Of particular concern to the ERSP is a better understanding of how microbial growth and activity quantitatively relate to mineral and contaminant biotransformation and the tools to measure and monitor this activity *in situ*. This requires a mechanistic understanding of how microorganisms access/obtain essential nutrients, electron donors and electron acceptors in order to sustain activity. ERSP is particularly interested in the integration of genome-enabled science with environmental studies to provide a more quantitative understanding of microbial metabolism and how metabolism is influenced by environmental conditions found at DOE sites. Also, interactions among groups of active microorganisms need to be better understood in order to more fully explain competitive processes and shifts in community structure. Additional techniques are needed to evaluate the distribution of active microbial communities in heterogeneous subsurface environments as well as identification of novel mechanisms of microbially mediated contaminant transformation.

The emphasis of the ERSP is on an integrative understanding of the relationships among the physical, chemical and biological processes influencing the transport and/or remediation of contaminants at DOE sites. Applications submitted to the ERSP need not necessarily incorporate an investigation of all three processes for situations where contaminant transport is dominated unequally by one process or another, but should describe the rationale for the overall focus of the research. These science needs are inherently multidisciplinary but do not preclude single investigator projects of strong DOE environmental relevance. Coordination with an ERSP field project is encouraged where appropriate but not required. The contaminants of interest for this Notice are listed above in the Contaminants of Concern section.

The following is a list of example areas of interest for this Solicitation. This list is intended to illustrate, but not necessarily constrain research to these selected areas:

- Understanding the fundamental chemical nature of reactive mineral surfaces, the biologically induced chemical and redox gradients across mineral-water interfaces and interactions with DOE relevant subsurface contaminants.
- Advanced techniques to assess the form, stability and distribution of immobilized DOE relevant contaminants in subsurface sediments.
- Research to identify and quantify the dominant physical and chemical mechanisms leading to the immobilization and/or remobilization of DOE relevant contaminants within the subsurface.
- Scaling of geochemical reactions and gradients, important for understanding the fate and transport of DOE relevant contaminants in the subsurface, occurring at the molecular, mineral surface and pore levels to larger scales.
- Techniques to quantitatively identify and quantitate active members of subsurface microbial communities and relate growth and activity to rates of biogeochemical reactions.
- Methods to quantify rates of contaminant biotransformation by active subsurface microbial communities.

- Understanding the hydrogeological and biogeochemical factors that govern the distribution and functioning of subsurface microbial communities.
- High(er) resolution geophysical techniques for evaluating subsurface structure, groundwater flow paths and contaminant transport.
- Novel, field-readable techniques for contaminant detection, speciation and quantification.
- New techniques for determining the presence and rates of key biogeochemical activities of subsurface microorganisms affecting contaminant transport.
- Sensors for evaluating redox, chemical gradients and, mineral or contamination speciation at crucial biogeochemical interfaces.
- Quantitative techniques to measure the distribution and contaminant sorption characteristics of minerals in natural materials
- Improving the understanding of the metabolic potential and physiology of subsurface microorganisms catalyzing contaminant transformation and/or the transformation of subsurface materials *in situ*.

Related Programs

ERSD strongly encourages investigators to familiarize themselves with the resources and potential partnering opportunities provided by ERSD. Leveraging of these resources is strongly encouraged. ERSD funds basic research on subsurface contaminant transport and remediation processes ranging from molecular scale processes to field scale processes via a unique set of program resources and partnering. Beginning in FY 2007, ERSP initiated three large multidisciplinary field scale research projects at three different sites. The Integrated Field-Scale Subsurface Research Challenges (IFCs) at Oak Ridge, Tennessee and Rifle, Colorado represent a new format for directed research that continues ongoing subsurface science at these sites. The IFC at the Hanford site, Washington provides a framework for a focused, integrated research effort at the Hanford 300 Area. In addition, ERSD supports a project at the Hanford 100H area to perform field investigations to assess the potential for immobilizing and detoxifying chromium contaminated soils and groundwater using bioremediation. These sites are an important component of ERSP-funded research enabling the testing of laboratory-derived hypotheses under natural conditions at the field scale. The sites also provide ERSP investigators with opportunities to obtain samples of environmental media for experimental purposes or opportunities to conduct short-term field experiments. Proposers interested in utilizing these resources must contact the respective Lead Scientist and must include a letter of support in the full application. Programmatic and contact information for these projects can found at: http://www.lbl.gov/ERSP/generalinfo/field_scale.html.

Programmatic resources also include the Environmental Molecular Science Laboratory (EMSL, http://www.emsl.pnl.gov/) located at Pacific Northwest National Laboratory. EMSL is a National Scientific User Facility that supports an array of integrative experimental and computational science resources that are made available to the scientific community. Investigators are strongly encouraged to consider EMSL capabilities in developing applications.

ERSD jointly funds several Environmental Molecular Science Institutes (EMSIs) with the National Science Foundation (NSF). ERSD supported EMSIs are located at Stanford University and Penn State University and are focusing on the fundamental nature of chemical and biological

processes occurring at important environmental interfaces (http://pangea.stanford.edu/research/emsi/index.html) and the kinetics and scaling of biogeochemical processes (http://www.ceka.psu.edu/). ERSD also provides support for experimental work at the national synchrotron light sources (see Availability of User Facilities and Other Specialized Resources below).

Biological processes profoundly influence contaminant transport at a variety of scales in the subsurface. ERSD maintains a close relationship with the Genomics:GTL program (http://genomicsgtl.energy.gov) and the microbial genome sequencing efforts at the Joint Genome Institute (JGI, http://www.jgi.doe.gov/) in order to take advantage of revolutionary genome-enabled and systems biology techniques that promise a more mechanistic understanding of subsurface microbial metabolism affecting contaminant transport.

DOE's substantial computational resources are now being applied to simulations of subsurface reactive transport through ERSD's participation in the SciDAC (Scientific Discovery through Advanced Computing, http://www.osti.gov/scidac/) program. The SciDAC program funds computationally intensive research on fundamental science questions using some of the world's most powerful computers.

Collaboration and Training

Multi-disciplinary and inter-institutional collaborations are strongly encouraged to enhance and strengthen research capabilities as needed. Collaboration could include institutions such as universities, industry, non-profit organizations, federal laboratories and Federally Funded Research and Development Centers (FFRDCs), including the DOE National Laboratories. All collaborative applications should include letters of agreement from included collaborators. These letters should specify the contributions the collaborators intend to make if the application is accepted and funded. Applications for multi-investigator projects should present a management structure for integrating collaborating investigators. Involvement of students and post doctoral scientists is encouraged. Refer to http://www.science.doe.gov/grants/Colab.html for details.

Availability of User Facilities and Other Specialized Resources

The Department of Energy has responsibility for programs and facilities that offer unique and complementary resources that support research in environmental remediation sciences. Potential applicants are encouraged to consider use of these programs/facilities in development of applications.

- The Environmental Molecular Science Laboratory (EMSL) at the Pacific Northwest National Laboratory, (http://www.emsl.pnl.gov), is sponsored by ERSD as a National Scientific User Facility with state-of-the-art instrumentation in environmental spectroscopy (http://www.emsl.pnl.gov/capabs/esbf.shtml), high field magnetic resonance spectroscopy (http://www.emsl.pnl.gov/capabs/hfmrf.shtml), high performance mass spectrometry (http://www.emsl.pnl.gov/capabs/hpmsf.shtml), high resolution electron microscopy (http://www.emsl.pnl.gov/capabs/insf.shtml), and high performance computing (http://www.emsl.pnl.gov/capabs/mscf.shtml).

  The EMSL's high performance supercomputer is available for computational

research in the physical, chemical and biological sciences, including geochemistry, groundwater flow and transport simulations, molecular thermodynamics and kinetics, heavy element chemistry, geochemistry, and surface chemistry (http://www.emsl.pnl.gov/capabs/mscf.shtml). The EMSL supercomputer is currently being upgraded and, by September 2008, should be greatly enhanced, providing up to ten times greater peak processing capabilities. Remote and on-site access to the system and associated software, and visualization and data storage capabilities are available through a separate application and external peer review process.

DOE also provides compute cycles to the scientific user community at other high performance computing centers, including the National Energy Research Scientific Computing Center (NERSC) at the Lawrence Berkeley National Laboratory (http://www.nersc.gov), and the National Center for Computational Sciences (NCCS) at the Oak Ridge National Laboratory (http://nccs.gov/).

- ERSD provides user support for experiments at synchrotron light sources that are capable of providing structural and chemical information often unavailable with conventional instrumentation. DOE laboratories with synchrotrons supporting ERSD research and points of contact include: Argonne National Laboratory (http://www.aps.anl.gov/index.html), contact Ken Kemner (kemner@anl.gov); Lawrence Berkeley National Laboratory (http://esd.lbl.gov/als_environmental_program/), contact Susan Hubbard (sshubbard@lbl.gov); and Stanford Synchrotron Radiation Laboratory (http://www-ssrl.slac.stanford.edu/mes/remedi/index.html), contact John Bargar, (bargar@slac.stanford.edu). Use of the synchrotron light sources requires a separate approval process.

REFERENCES

National Research Council, 2000. Research Needs in Subsurface Science, U.S. Department of Energy's Environmental Management Science Program. National Academy Press, Washington, DC. http://www.nap.edu/browse.html

Department of Energy, 2001. A Report to Congress on Long-Term Stewardship. Office of Environmental Management. Washington, DC. http://www.lm.doe.gov/documents/3_pro_doc/lts_study/rpt_to_congress_vol_I.pdf

Davis, J.A.; S.B. Yabusaki; C.I. Steefel; J.M. Zachara; G.P. Curtis; G.D. Redden; L.J. Criscenti; B.D. Honeyman 2004. Assessing Conceptual Models for Subsurface Reactive Transport of Inorganic Contaminants EOS 85, 449-455. http://www.iscmem.org/Documents/Publication_Davis2004Eos.pdf).

Department of Energy, 2006. EMSL Strategic Plan 2006. Prepared for DOE under contract DE-AC06-76RL01830 by Pacific Northwest National Laboratory (PNNL-15578), http://www.emsl.pnl.gov/docs/strategic_plan_01_06.pdf.

Department of Energy, 2007. Basic Research Needs for Geosciences: Facilitating 21st Century Energy Systems. DOE Office of Science, Basic Energy Sciences, Washington, DC, 186p. (http://www.sc.doe.gov/bes/reports/files/GEO_rpt.pdf)

Relevance to Mission

A key consideration in the evaluation of research applications will be applicability to the Environmental Remediation Sciences Division (ERSD) mission to support basic science that underpins environmental remediation and long term stewardship of DOE sites. Applicants will need to identify specific areas of scientific need and make a strong case for the value of the proposed research in helping to resolve those needs. The application should explain how resolution of these needs could improve capabilities in site stewardship and/or understanding/controlling subsurface contaminant fate and transport. Therefore, **all applications submitted in response to this Notice must explicitly state how the proposed research will support the accomplishment of the BER Long Term Measure to *"provide (by 2015) sufficient scientific understanding such that DOE sites would be able to incorporate physical, chemical and biological processes into decision making for environmental remediation and long-term stewardship."*** DOE also will consider, as part of the evaluation, program policy factors including balance among the program areas and research already in progress.

Other Special Requirements:

Only the Lead Institution and PI need submit an application to this Notice at this time but the submission must include all budgetary information for all funded Co-PIs. The application narrative should begin with a cover page that includes: the project title, the Lead PI's name and complete contact information, whether the application is for a **Full or Exploratory** project, and a table listing the Lead PI and institution and all funded Co-PIs, their institutions and the amount of funding requested for each year for the project for each funded investigator. The template for the required cover page should be downloaded from http://www.lbl.gov/ERSP/generalinfo/proposalcalls.html. Additionally, submitting (lead) PIs should include the entire submission package (application, budgets for all funded PIs, certification forms, etc.) in one pdf document as an attachment within the Grants.gov submission system.

The one-page Project Summary/Abstract should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s), the project title, the objectives of the project, the hypotheses to be tested, the proposed experimental design, the names of **all investigators** and their affiliations, and the potential impact of the project (i.e., benefits, outcomes). The abstract does not count toward the narrative page limits.

Attachments should include short (2 pages) curriculum vitae, a listing of all current and pending federal support and Letters of Intent for proposed collaborators, including use of IFC sites or samples (when applicable). These attachments do not count toward the narrative page limits.

Grantees must comply with federal and state laws and regulations as appropriate. Although compliance with the National Environmental Policy Act (NEPA) is the responsibility of DOE, grantees proposing to conduct field-related research should expect to provide information necessary for the DOE to complete the NEPA review and documentation.

Program Funding

It is anticipated that up to **$6,000,000 will be available for approximately 20 awards** to be made in Fiscal Year 2009, contingent on the availability of appropriated funds. Funds for this research will come from the Environmental Remediation Sciences Program. DOE is under no obligation to pay for any costs associated with preparation or submission of applications. DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this Notice.

For a **Full Application** (narrative limited to 20 pages)**,** applicants may request project support up to three years, with year 2 and 3 support contingent on the availability of funds, progress of the research and programmatic needs. Annual budgets for single investigator projects may not exceed $250,000/year total costs. Annual budgets for multi investigator projects may not exceed $450,000/year total costs.

For an **Exploratory Application** (narrative limited to 10 pages), applicants may request project support for up to two years with a total budget of up to $150,000.

Applications that are not compliant with either the page or budget limitations described above may be declined administratively without review.

All Lead PI's are required to attend an annual ERSD PI meeting (generally a four-day meeting held in the Washington DC area). Travel funds should be budgeted to allow at least the lead PI to attend this meeting.

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT.

DOE anticipates awarding grants under this program announcement.

B. ESTIMATED FUNDING.

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C. MAXIMUM AND MINIMUM AWARD SIZE.

See B. Estimated Funding section above.

D. EXPECTED NUMBER OF AWARDS.

See B. Estimated Funding section above.

E. ANTICIPATED AWARD SIZE.

See B. Estimated Funding section above.

F. PERIOD OF PERFORMANCE.

See B. Estimated Funding section above.

G. TYPE OF APPLICATION.

DOE will accept new applications under this Announcement.

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS.

Applicants from Colleges and Universities, non-profit organizations, for-profit commercial organizations, state and local governments, and unaffiliated individuals. Researchers from Federally Funded Research and Development Centers (FFRDCs) or DOE National Laboratories are not eligible to respond to this notice.

Researchers from other Federal Agencies interested in submitting a proposal are encouraged to submit a preproposal referencing this Program Solicitation DE-PS02-08ER08-09; if a formal proposal is encouraged, Federal agencies should follow instructions at this website http://www.sc.doe.gov/grants/fed_prop.html on how to submit a formal proposal.

B. COST SHARING.

Cost sharing is not required.

C. OTHER ELIGIBILITY REQUIREMENTS.

N/A

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE.

Application forms and instructions are available at Grants.gov. To access these materials, go to http://www.grants.gov, select "Apply for Grants", and then select "Download Application Package". Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package.

B. LETTER OF INTENT AND PREAPPLICATION.

1. Letter of Intent.

A Letter of Intent is not required.

2. Preapplication.

Potential applicants are **strongly encouraged** to submit a brief preapplication, referencing Program Solicitation DE-PS02-08ER08-09 for receipt by DOE by 4:30 p.m., Eastern Time, January 22, 2008.

Preapplications are limited to **three pages total,** including a prescribed cover page. The cover page should include: the project title, the Lead PI's name and complete contact information, whether a **Full or Exploratory application** is anticipated, and a table listing the Lead PI and institution and all funded Co-PIs, their institutions and the amount of funding requested for each year for the project for each funded investigator. The template for the required cover page should be downloaded from http://www.lbl.gov/ERSP/generalinfo/proposalcalls.html. Preapplications should be sent individually as a single PDF file attachment via email to: Kim.Laing@science.doe.gov. **The subject line of the email must state: "Preapplication DE-PS02-08ER08-09 – [Full or Exploratory]".** Preapplications must be received by DOE by 4:30 PM, Eastern Time, January 22, 2008. **No FAX or mail submission of preapplications will be accepted.**

Preapplications will be reviewed for conformance with the guidelines presented in this Solicitation and suitability in the technical areas specified in this Solicitation. A response to the preapplications encouraging or discouraging formal applications will be communicated to the applicants by February 13, 2008. Applicants who have not received a response regarding the status of their preapplication by this date are responsible for contacting the program office to confirm the status of their preapplications.

Preapplications should describe the research objectives, the technical approach(s), and the proposed team members and their expertise. The intent in requesting a preapplication is to save the time and effort of applicants in preparing and submitting a formal project application that may be inappropriate for the program. Preapplications will be reviewed relative to the scope and research needs as outlined in this solicitation and outlined in the ERSP strategic plan (at http://www.science.doe.gov/ober/ERSD_top.html). Biographical data are not required for preapplications, nor is an institutional endorsement necessary.

C. CONTENT AND FORM OF APPLICATION – SF 424 (R&R).

You must complete the mandatory forms and any applicable optional forms (e.g., SF-LLL-Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below**. Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

1. **SF 424 (R&R).**
   Complete this form first to populate data in other forms. Complete all the required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the "Help Mode" (Icon with the pointer and question mark at the top of the form). The list of certifications and assurances referenced in Field 18 can be found on the Applicant and Recipient Page at http://management.energy.gov/business_doe/business_forms.htm, under Certifications and Assurances.

2. **RESEARCH AND RELATED Other Project Information.**
   Complete questions 1 through 5 and attach files. The files must comply with the following instructions:

   Project Summary/Abstract (Field 6 on the Form).
   The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s) (PD/PI), the project title, the objectives of the project, the hypotheses to be tested, the proposed experimental design, the names of **all investigators** and their affiliations, and the potential impact of the project (i.e., benefits, outcomes). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font not smaller than 11 point. To attach a Project Summary/Abstract, click "Add Attachment."

   Project Narrative (Field 7 on the form).
   The project narrative for a **Full Application must not exceed 20 pages and for an Exploratory Application must not exceed 10 pages** of technical information, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). *Applications that are not compliant with either the page or budget limitations described in this document may be declined administratively without review.* The font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application, because the information contained in these sites will not be reviewed. See Part VIII.D for instructions on how to mark proprietary application information. To attach a Project Narrative, click "Add Attachment."

The first page of your narrative should begin with a cover page that includes: the project title, the Lead PI's name and complete contact information, whether the application is for a **Full or Exploratory** project, and a table listing the Lead PI and institution and all funded Co-PIs, their institutions and the amount of funding requested for each year for the project for each funded investigator. The template for the required cover page should be downloaded from http://www.lbl.gov/ERSP/generalinfo/proposalcalls.html.

The narrative comprises the research plan for the project. Letters of intent from all collaborators and short curriculum vitae of all senior personnel must be included in the application. Applications not meeting these requirements will be deemed ineligible during the initial screening process. The major part of the narrative should be devoted to a description and justification of the proposed project, including details of the methods to be used. It should also include a timeline for the major activities of the proposed project, and should indicate which project personnel will be responsible for which activities.

The project narrative must include:

Project Objectives:
This section should provide a clear, concise statement of the specific objectives/aims of the proposed project.

Project Timetable:
This section should outline as a function of time, year by year, all the important activities or phases of the project, including any activities planned beyond the project period. Successful applicants must use this project timetable to report progress.

Project Performance Site:
Indicate the primary site where the work will be performed. If a portion of the work will be performed at any other sites, identify those sites, also.

Biographical Sketch Appendix:
Provide a biographical sketch for the project director/principal investigator (PD/PI) and each senior/key person listed in Section A on the R&R Budget form. **Provide the biographical sketch information as an appendix to your project narrative. Do not attach a separate file.** The biographical sketch appendix will not count in the project narrative page limitation. The biographical information for each person must not exceed 2 pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

Education and Training. Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

Research and Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the

proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

Current and Pending Support Appendix.
Provide a list of all current and pending support (both Federal and non-Federal) for the Project Director/Principal Investigator(s) (PD/PI) and senior/key persons, including subawardees, for ongoing projects and pending applications. For each organization providing support, show the total award amount for the entire award period (including indirect costs) and the number of person-months per year to be devoted to the project by the senior/key person. **Provide the Current and Pending Support as an appendix to your project narrative. Do not attach a separate file. The Current and Pending Support Appendix will not count in the project narrative page limitation.** Concurrent submission of an application to other organizations for simultaneous consideration will not prejudice its review.

Identification of Potential Conflicts of Interest or Bias in Selection of Reviewers Appendix.

Provide the following information in this appendix and append to your project narrative. Do not attach a separate file. (This appendix will not count in the project narrative page limitation):

Collaborators and Co-editors: List in alphabetical order all persons, including their current organizational affiliation, who are, or who have been, collaborators or co-authors with you on a research project, book or book article, report, abstract, or paper during the 36 months preceding the submission of this application. Also, list any individuals who are currently, or have been, co-editors with you on a special issue of a journal, compendium, or conference proceedings during the 24 months preceding the submission of this application. If there are no collaborators or co-editors to report, state "None."

Graduate and Postdoctoral Advisors and Advisees: List the names and current organizational affiliations of your graduate advisor(s) and principal postdoctoral sponsor(s) during the last 5 years. Also, list the names and current organizational affiliations of your graduate students and postdoctoral associates during the past 5 years.

Bibliography & References Cited Appendix.
Provide a bibliography of any references cited in the Project Narrative. Each reference must include the names of all authors (in the same sequence in which they appear in the

publication), the article and journal title, book title, volume number, page numbers, and year of publication. Include only bibliographic citations. Applicants should be especially careful to follow scholarly practices in providing citations for source materials relied upon when preparing any section of the application. In order to reduce the number of files attached to your application, please provide the Bibliography and References Cited information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.

Facilities & Other Resources Appendix.
This information is used to assess the capability of the organizational resources, including subawardee resources, available to perform the effort proposed. Identify the facilities to be used (Laboratory, Animal, Computer, Office, Clinical and Other). If appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Describe only those resources that are directly applicable to the proposed work. Describe other resources available to the project (e.g., machine shop, electronic shop) and the extent to which they would be available to the project. In order to reduce the number of files attached to your application, please provide the Facility and Other Resource information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.

Equipment Appendix.
List major items of equipment already available for this project and, if appropriate identify location and pertinent capabilities. In order to reduce the number of files attached to your application, please provide the Equipment information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.

Other Attachment Appendix.
If you need to elaborate on your responses to questions 1-5 on the "Other Project Information" document, please provide this information as an appendix to your project narrative. This appendix will not count in the project narrative page limitation.

Do not attach files for fields 8, 9, 10, and 11, instead follow the above instructions to include the information as appendices to the project narrative file (these appendices will not count in the project narrative page limitation).

3. RESEARCH AND RELATED BUDGET.

Complete the Research and Related Budget form in accordance with the instructions on the form (Activate Help Mode to see instructions) and the following instructions. You must complete a separate budget for each year of support requested. The form will generate a cumulative budget for the total project period. You must complete all the mandatory information on the form before the NEXT PERIOD button is activated. You may request funds under any of the categories listed as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G).

Budget Justification (Field K on the form).
Provide the required supporting information for the following costs (See R&R Budget instructions): equipment; domestic and foreign travel; participant/trainees; material and supplies; publication; consultant services; ADP/computer services; subaward/consortium/contractual; equipment or facility rental/user fees; alterations and renovations; and indirect cost type. Provide any other information you wish to submit to justify your budget request. **Attach a single budget justification file for the entire project period in Field K.** The file automatically carries over to each budget year.

4. **SF-LLL Disclosure of Lobbying Activities.**
If applicable, complete SF- LLL. Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form - LLL, "Disclosure Form to Report Lobbying."

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	Attach to
SF 424 (R&R)	PureEdge Form	N/A
RESEARCH AND RELATED Other Project Information	PureEdge Form	N/A
Project Summary/Abstract	PDF	Field 6
Project Narrative, including required appendices	PDF	Field 7
RESEARCH & RELATED BUDGET	PureEdge Form	N/A
Budget Justification	PDF	Field K

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS.

If selected for award, DOE reserves the right to request additional or clarifying information for any reason deemed necessary, including, but not limited to:

- Indirect cost information
- Other budget information

- Name and phone number of the Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Commitment Letter from Third Parties Contributing to Cost Sharing, if applicable

E. SUBMISSION DATES AND TIMES.

1. Letter of Intent Due Date.

A Letter of Intent (LOI) is not required.

2. Preapplication Due Date.

Preapplications must be received by January 22, 2008, 4:30 pm Eastern Time (See part IV.B.2)

3. Formal Applications.

Formal applications submitted in response to this Announcement must be received by March 26, 2008, 8:00 p.m. Eastern time, to permit timely consideration of awards in Fiscal Year 2008. **You are encouraged to transmit your application well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.**

F. INTERGOVERNMENTAL REVIEW.

This program is not subject to Executive Order 12372 Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS.

Cost Principles**.** Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600.

Pre-award Costs**.** Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR Part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS.

1. Where to Submit.

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1-800-518-4726 or send an email to support@grants.gov.

2. Registration Process.

You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least three weeks before the application due date**. It may take 21 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at http://www.grants.gov/assets/OrganizationRegCheck.doc to guide you through the process. IMPORTANT: During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special password called "Marketing Partner identification Number" (MPIN). When you have completed the process, you should call the Grants.gov Helpdesk at 1-800-518-4726 to verify that you have completed the final step (i.e. Grants.gov registration).

3. Application Receipt Notices.

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of five e-mails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of email Number 2. When the AOR receives email Number 5, it is their responsibility to follow the instructions in the email to logon to IIPS and verify that their application was received by DOE. You will need the Submission Receipt Number (email Number 1) to track a submission. The titles of the five e-mails are:

Number 1 - Grants.gov Submission Receipt Number
Number 2 - Grants.gov Submission Validation Receipt for Application Number
Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number
Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number
Number 5 – DOE e-Center Grant Application Received

The last email will contain instructions for the AOR to register with the DOE e-Center. If the AOR is already registered with the DOE e-Center, the title of the last email changes to:

Number 5 – DOE e-Center Grant Application Received and Matched

This email will contain the direct link to the application in IIPS. The AOR will need to enter their DOE e-Center user id and password to access the application.

Part V - APPLICATION REVIEW INFORMATION

A. CRITERIA.

1. Initial Review Criteria.

Prior to a comprehensive merit evaluation, DOE will perform an initial review in accordance with 10 CFR 605.10(b).

2. Merit Review Criteria.

Applications will be subjected to scientific merit review (peer review) and will be evaluated against the following evaluation criteria which are listed in descending order of importance codified at 10 CFR 605.10(d):

1. Scientific and/or Technical Merit of the Project;
2. Appropriateness of the Proposed Method or Approach;
3. Competency of Applicant's Personnel and Adequacy of Proposed Resources; and
4. Reasonableness and Appropriateness of the Proposed Budget.

The evaluation process will include program policy factors such as the relevance of the proposed research to the terms of the announcement and the agencies' programmatic needs. Note that external peer reviewers are selected with regard to both their scientific expertise and the absence of conflict-of-interest issues. Both Federal and non-Federal reviewers may be used, and submission of an application constitutes agreement that this is acceptable to the investigator(s) and the submitting institution.

A key consideration in the evaluation of research applications will be applicability to the Environmental Remediation Sciences Division (ERSD) mission to support basic science that underpins environmental remediation and long term stewardship of DOE sites. Applicants will need to identify specific areas of scientific need and make a strong case for the value of the proposed research in helping to resolve those needs. The application should explain how resolution of these needs could improve capabilities in site stewardship and/or understanding/controlling subsurface contaminant fate and transport. Therefore, **all applications submitted in response to this Notice must explicitly state how the proposed research will support the accomplishment of the BER Long Term Measure to *"provide (by 2015) sufficient scientific understanding such that DOE sites would be able to incorporate physical, chemical and biological processes into decision making for environmental remediation and long-term stewardship."*** DOE also will consider, as part of the evaluation, program policy factors including balance among the program areas and research already in progress.

B. REVIEW AND SELECTION PROCESS.

1. Merit Review.

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Office of Science Merit Review System for Financial Assistance." This Merit Review System is available at: http://www.science.doe.gov/grants/merit.html.

2. Selection.

The Selection Official will consider the merit review recommendation, program policy factors, and the amount of funds available.

3. Discussions and Award.

The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600 and 605; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES.

DOE intends to make awards as early as possible in FY 2009. The actual date of award will be influenced by the availability of programmatic funds.

Part VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES.

1. Notice of Selection.

DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of pre-award costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. Notice of Award.

A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE; 4. DOE assistance regulations at 10 CFR Part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; 5. National Policy Assurances to Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS.

1. Administrative Requirements.

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR Part 600 and 10 CFR Part 605 (See: http://ecfr.gpoaccess.gov), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. Special Terms and Conditions and National Policy Requirements.

Special Terms and Conditions and National Policy Requirements.
The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at http://management.energy.gov/business_doe/business_forms.htm. The National Policy Assurances to Be Incorporated As Award Terms are located at http://management.energy.gov/business_doe/business_forms.htm.

Intellectual Property Provisions.
The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.energy.gov/financial_assistance_awards.htm.

C. REPORTING.

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F4600.2, attached to the award agreement.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS.

Questions regarding the content of the announcement must be submitted through the "Submit Question" feature of the DOE Industry Interactive Procurement System (IIPS) at http://e-center.doe.gov. Locate the program announcement on IIPS and then click on the "Submit Question" button. Enter required information. You will receive an electronic notification that your question has been answered. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions.

B. AGENCY CONTACT:

GENERAL INQUIRIES ABOUT THIS NOTICE SHOULD BE DIRECTED TO:

Agency Contact:

Dr. Michael Kuperberg
Telephone: (301) 903-4902
E-mail: Michael.Kuperberg@science.doe.gov

PART VIII - OTHER INFORMATION

A. MODIFICATIONS.

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an email when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of changes through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS.

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION.

Patentable ideas, trade secrets, proprietary or confidentional commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and specifies the pages of the application which are to be restricted:

"The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant."

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

"The following contains proprietary information that (name of applicant) requests not be released to persons outside the Government, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL.

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an application.

Non-Federal personnel conducting administrative activities must sign a non-disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM.

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See "Notice of Right to Request Patent Waiver" in paragraph G below.)

Rights in Technical Data. Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to insure the commercialization of technology developed under a DOE agreement.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

H. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES.

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.